got to work together if this is going to work. That's all, thank you.

MS. MANNER: Thank you very much. And then I'd like to call up Bill Carrow please.

MR. CARROW: Good afternoon. My name is William Carrow, and I'm the President Elect of APCO International, the nation's oldest and largest public safety communications organization. APCO's over 15,000 members are on the front line of providing communications capability for our nation's first responders. We have long advocated steps to improve interoperability among public safety communications systems through digital equipment, standards such as Project 25, spectrum allocation to facilitate multi-agency shared systems, funding to support interoperability solutions, and improved governance and planning across local, state, tribal, and Federal agencies.

APCO applauds the Commission for proposing the creation of an Emergency Response Interoperability Center, otherwise known as ERIC, though many important issues regarding ERIC must still be resolved. An entity to address interoperability will be essential as we move into the broadband environment where local public safety systems, national public safety networks

and commercial networks will need to interoperate to provide optimum broadband communications for our nation's first responders.

A wide variety of network engineering standards, roaming agreements, priority access procedures, equipment standards, and other interoperability protocols will be needed. ERIC could play a very important role in addressing these very issues. However, we believe that there are several critical elements for ERIC to be a success. First of all, there must be sufficient funding to ensure that ERIC is able to fulfill its responsibilities in an effective and efficient manner.

Second, ERIC must be responsive to local public safety needs. Therefore there must be an effective advisory body to ERIC that includes direct representation from first responder leadership associations, organizations such as APCO and representatives from a variety of public safety interests, including large, medium, and small agencies, urban and rural areas, and diverse regions of this nation. Critical infrastructure industries such as utilities should also be involved in the process.

Third, we believe that ERIC should be a part

of the FCC as the Commission has direct jurisdiction over state and local government spectrum allocation and management. However, there should also be close cooperation and participation by DHS, NTIA, NIST, and other relevant Federal agencies. Fourth, ERIC will need to work closely with the Public Safety Spectrum Trust, the national licensee of the public safety broadband spectrum. Currently there is little information about the specific role and responsibility of ERIC and how that aligns with the roles and responsibility of the PSST. We encourage the Commission to address the role of PSST and its relationship with ERIC as early as possible.

Fifth, there is uncertainty regarding the scope, authority, and interaction of ERIC with local, state, tribal, and Federal stakeholders. We encourage the Commission to address this issue in a clear and uniform manner as early as possible. APCO looks forward to participating in ERIC and working with the Commission to enhance public safety communications capability.

We also continue to urge Congress to reallocate the D block as we believe that would be the most effective way to address the long term broadband needs of public safety. In any event, ERIC could play

a critical in ensuring that public safety broadband communications will be available to the maximum number of users possible with seamless interoperability. On behalf of APCO and its nationwide membership, we thank you for the opportunity to submit these remarks.

MS. MANNER: Thank you very much, Bill. I look to our panelists if they have any remarks? David?

MR. FURTH: One issue that I would I think underscore is, Bill raised again a number of very good questions I think, and one in particular that we certainly are focused on is what is the relationship between ERIC and the Public Safety Spectrum Trust as a licensee. And although it is I think obvious, it probably needs to be underscored ERIC is not intended to be the licensee or to replace the licensee in terms of doing the sorts of things that FCC licensees normally do.

It will not hold rights in spectrum, it will not build and operate networks, it will not enter into partnerships or contracts with vendors. ERIC is going to be in its initial iteration housed within the FCC and it is essentially performs a regulatory function, but it's a regulatory function with a technical focus. And I think what we envision is that in fact ERIC and

the public safety licensee reinforce one another.

Because the standards and the requirements as we described in our concept paper that ERIC will generate, those can then become the basis for rules for license conditions and for authority that the licensee can carry out as well as obligations that the licensee will be responsible for. So I think we agree that laying that out clearly so that the lines of responsibility and lines of authority are very clearly delineated is extremely important, and that's another goal that we're focused on. I don't know if others want to address other aspects of Bill's comments.

MS. MANNER: Thank you very much, Bill.

MR. CARROW: Thank you.

MS. MANNER: Next up is Cynthia Cole.

MS. COLE: Good afternoon. My name is Cynthia Wensel Cole, and I am an Interoperability Strategist and Architect with Cynergyze Consulting. My comments echo many of those that have been made today, and I'm picking up on one of Chief Barnett's statements last week in which he said we must build upon what's already in place. I'm presenting a specific technical idea in this area.

As you know, all public safety first responders carry radios today, and a growing

percentage of those radios are now IP based devices, operating on sophisticated and secured IT networks. These networks deliver unique capabilities essential to the public safety missions, including managed access control, centralized dispatch, multiple layers of priority, end to end encryption, audio logging, and 99.999 percent availability.

The investment by taxpayers in these systems is already in the billions of dollars, and they are built to last 20 years or longer. While developing broadband handsets equivalent to these radios is relatively straightforward, the challenges on the broadband networks side are well beyond the reach of both technology and commercial investment for at least five to ten years.

I encourage you to embrace this reality and pursue ways to get the best of both worlds for the public safety community. With modern public safety networks now based upon these IT technologies, a single payer of inexpensive network gateways can now tie together vast coverage areas using just ethernet connections. These standards based interfaces have just become commercially available, having been ably managed by Project 25, NIST, and DHS.

The systems of systems approach melts away

the differences in RF bands, over-the-air interfaces, and equipment manufacturers. These same network interfaces, or better yet revved up versions of them, could be used to connect radio networks to the nationwide broadband network. Since the users would get to keep their radio and add a broadband device, they would then have redundant voice and data, redundant network coverage, and a redundant device.

This approach achieves an inherently reliable experience for the end users and will deliver services which are more robust, more integrated, and less costly to deploy. As you know, the obstacle to interoperability cannot be overcome by just adding spectrum technology and funding, although that helps. Public safety must also continue getting trained and accustomed to working across and roaming across system and operational boundaries.

In closing, the policies and requirements which will be driven by the proposed center will set the pace for interoperability for many years to come. Therefore I ask that ERIC works toward network interfaces which will connect the systems of tomorrow, but also encourage connectivity between the existing systems of today. By doing so, the public safety community will be that much more prepared for the

transformational promise of the nationwide public safety broadband network when it arrives. To quote a public safety visionary and friend of mine, let's make sure no radio is left behind. Thank you very much.

MS. MANNER: Thank you, Cynthia. And I think Jeff Goldthorp wanted to?

MR. GOLDTHORP: Yeah, that's -- one of the things I didn't mention in my remarks at the beginning, and one of the things I think ERIC will be doing, is developing requirements for gateway technologies and the integration of gateway technologies into the broadband wireless network that we're talking about today. And those gateway technologies can be exactly the kinds of gateway technologies that you're talking about here. So I don't think anything we're talking about with ERIC is meant to exclude what you're describing, and we just need to find the right way to include it.

MS. COLE: Right, and emphasize it perhaps a little more. Maybe Dereck could start testing it this year.

MS. MANNER: Dereck?

MR. ORR: I was actually going to say that that is one of the key things we want to look at in the demonstration network, is looking at tying

together existing narrow band systems with the broadband network. DHS has already done this in a pilot with DC and already demonstrated that these networks can be tied together, and being able to use a cellular device as you would a public safety radio on a public safety system. And that's something we want to try out in the LTE demonstration network in Boulder as well, and we're going to be working in partnership with DC again in this demonstration. But you're right on point, Cynthia, and that's something we're going to be looking at specifically.

MS. MANNER: And Chris had wanted to say a couple words?

MR. ESSID: I was just going to say that right now we're updating the National Emergency Communications Plan, and a lot of this is going to be in the plan. As these next generation technologies are developed, how do you link them with today's technologies? I mean land mobile radio, the fact is, is going to be around for quite some time because we've invested billions of dollars and people are going to use it for its entire life cycle. And so trying to come up with ways to converge these technologies is one of the things that is going to be front and center in the new version of the national

plan that we're starting to develop right now.

MS. MANNER: And then Behzad?

MR. GHAFFARI: Yeah, until interoperability happens, I mean technically the communications layers happens in different layers, and these layers, if I want to summarize, there are three layers. One is the physical layer, the other one is a network layer, the other one is application layer. And ERIC is mindful of all three of them. For physical layers, basically we need to have devices that perhaps on an LTE or some other 4G technology that in order this interoperability happen. And for the network layer we are assuming that this would be an IP network, so they all can talk to each other. And application layers are exactly the topic that you're talking about, and ERIC is going to consider that when it comes to setting standard and adopting standard, that's very important.

MS. MANNER: And thank you very much, Cynthia. I would just remind the folks, our panelists here, to talk into their microphone, because you're all facing the panelist. With that, I'd like to invite Jonathan DeLong up.

MR. DELONG: Good afternoon. Thank you, Jennifer, esteemed panel, and of course friends of

ERIC. I am Jonathan DeLong, I'm Executive Vice President of Zos Communications. And I can probably keep this short. I think we all agree that we want ERIC, now in its infancy, to grow up to be strong, to be adaptive, and to serve us all. What I want to remind the panel to consider in the future is for innovation coming down the pipe, not yet conceived today, or still yet on the bleeding edge of capabilities.

And I think about, we think about at Zos Communications, the difference between an incident or an event that might be many incidents, everyday need and mutual aid versus a disaster versus a catastrophe, and how ERIC has to be able to accommodate all of these things. What we're most focused on, and we think is very relevant, is the consideration of location in all of this, and how the new devices, both off the shelf and to be developed, can bring location awareness to the table, not just from GPS, not just from the carrier networks, but from a whole host of things being emergent today in urban areas and rural settings.

And where what we're accommodating is the handoff from one CAD system to the next based on a first responder moving across an imaginary line in the

sand and how that line needs to be flexible and adaptive to keep first responders in touch with the chain of command and an expanding chain of command as the incident grows in intensity in a nonstatic environment. So, as all of the interests in this room probably provide a small layer into the total solution of ERIC, we want to remind the panel to consider location and emergent technologies.

And in relationship emergent technologies, there's a host of development communities out there who would love to take part in the solutions that are being presented. And beyond standards and protocols are the clear expression of the need, taking the incidents in the field and putting them in plain terms for everyone to understand. And we believe that if everyone could understand the need and the challenges, that it's going to foster more innovation across a larger group of developers and stakeholders. And that's all I have for you today, thank you.

MS. MANNER: Thank you. Jeff?

MR. GOLDTHORP: I think what you just described is I think a really good sort of a vertical example of an application that, were it to, you know, catches on, there's going to be a clear need for interoperability amongst the networks that are being

built out. And the application, I think that the ultimate application is the CAD application you described, but the location awareness is necessary for the CAD application to work, and in order for that to all hang together you've got to have interoperability amongst these networks.

So what Behzad, I think that sort of plays back to what Behzad was saying before, which is -- and when we're thinking about ERIC we're not just thinking about physical or even network layer interoperability, we're thinking about interoperability all the way up to the application layer, which gets into some of the points you're making here.

MR. DELONG: Indeed.

MR. GOLDTHORP: Thank you.

MR. DELONG: Thank you.

MS. MANNER: Thank you very much. And with that, I'd like to call up Stephen Verbil.

MR. VERBIL: Thanks, Jennifer, appreciate it. Good afternoon, everyone. Is this mic close enough? My name is Stephen Verbil and I'm Emergency Telecommunications Manager for the Office of Statewide Emergency Telecommunications within the Department of Public Safety for the state of Connecticut. We provide 911 to the state of Connecticut and our

employees provide engineering and frequency coordination services to our state and to our region, it's region 19 New England.

I'm Co-Chair of the Region 19 700 and 800 MHZ Technical Advisory Committee, and the Regional Plan Update Committee experience is probably instructive for what we're talking about here today. The ERIC concept paper puts forth a comprehensive plan for the FCC to determine a host of parameters and procedures for our use of the 700 MHZ broadband frequencies, and it's about time we move forward, I think we all would agree.

The example and precedent, however, set by the FCC, regarding for instance the NPSTC 800 MHZ frequencies and the devolution to the regions of plan creation and plan execution, put the FCC in those days in an enabling role, preserving the FCC's ultimate regulatory and enforcement role for use when needed. But it left the decisions of the how and the who to those on the ground who need and use the technology. Contrary to this precedent, the ERIC plan combines planning, technology decision making, and policy setting down to the choice of encryption types within the same agency that has the ultimate enforcement responsibilities.

We believe these two don't sit well together. While I understand the frustration that the Commission and staff must feel with the lack of speed in implementing a 700 MHZ broadband solution, because we in the public safety communications community certainly share that frustration, it may well be that a plan that looks a little bit more like that adopted to administer the NPSTC frequencies, national in scope but with regional representation, would provide a better outcome for all of us, would be more likely to succeed, and have less potential to stifle innovation. Thank you.

MS. MANNER: Thank you very much. Does anyone want to have any statements?

(No response.)

MS. MANNER: Okay, well thank you very much, we'll take your comments into consideration, we appreciate them. With that, I'd like to call up Gil Armendariz.

MR. ARMENDARIZ: My name is Gil Armendariz, I'm the Chairman of the Sy Tech Corporation. And one of the things that I'd like to discuss is one thing that was mentioned early in the opening remarks, and that interoperability is 10 percent technical and 90 percent administrative and operational. We at Sy Tech

are the prime contractor for the Virginia Commonwealth Link Interoperability System Comm Link. We currently have a system that was actually originally, if I can use that word, fathered by Chris Essid back about five or six years ago when they got funding from DHS and the COPS program.

And a number of regions in the Virginia area got together and put out an RFP that was competitive, and fortunately we did win the job, and as of right now we have actually a system of systems communications all the way from Fairfax to North Carolina. We've got Virginia Tech, Liberty University, a number of universities, hospitals, we even have the military that's actually in the actual link itself.

And one of the major problems that we've encountered is not really technical, it's really the establishment of the MOUs, the administration, and bringing together the actual agencies from civilian to military to all of the different agencies that basically 99 percent of the time they don't really want to talk to each other because of security issues. But what happens when you actually have an incident, obviously you need to talk.

And the problem that you have is you need to

have an actual system in place at that instant in time, that's your problem that you have. So one of the things that I'm asking ERIC that you need to look into very deeply, and quite frankly I don't know how to solve that, it has to do with really the administrative process of bringing the different agencies together to want to actually put together a system of systems.

The technology's already there. We're currently right now working with the commercial broadband networks, the 3G and the 4G, and one of the areas that would really be of tremendous advantage or of interest to public safety would be to have priority traffic during actual incidents. Recently in the governor's inauguration in Richmond they used our system for communications. Some of the actual undercover agents had actual PDAs that they were using, they didn't want to go out with a big public safety radio because they were undercover agents.

It worked out well the day before, but then when the actual governor's inauguration took place, because everyone's using their phones, obviously they had problems with actual communication. So that scenario that would be of tremendous benefit if we could look into Verizon, AT&T, the other commercial

carriers, if they would provide the public safety with priority during the incidents that you had. For example we did actual testing during the inauguration, and we had a very good lab here, we had 2 million people with cell phones and we went out there with all kinds of cell phones to see what would work and what wouldn't work. Guess what, nothing worked.

The only thing that would work were text messages. But we actually timed those also, you'd send a text, you may get it in 30 seconds, you may get it in three minutes, sometimes you'd get it an hour later. All right, but it's because of the fact that you've got everyone else using the actual network that's being used. So that would really be an area that would be of tremendous help to public safety. All right, with that, that's all my comments that I have right here. Any questions anyone has?

MS. MANNER: Thank you. David?

MR. FURTH: I'm going to make I guess an observation, and maybe sort of a question back, I think that you cited the sort of the 90/10 split which Chris also cited, that, you know, interoperability is about 10 percent technology and 90 percent the sort of operational and governance issues, and I think that's true. I mean I think that what we've seen in the

narrow band world suggests that that's the case.

Part of what we're focused on here and with ERIC I think is that in the broadband world we now have an opportunity to get that 10 percent right from the start. Because I think one of the reasons that we've had it, you know, so much work that had to be done with the 90 percent is because of the long time that it took to get the technology in the narrow band world to the point where you had interoperability.

And you're still going to have even assuming you have perfect technical interoperability you're going to have a whole host of issues, which I think as we see it are not necessarily the issues that ERIC would deal with, in fact these are really in the wheelhouse of OEC and many within the Federal government that have to deal with these on a daily basis as well as with the public safety community. But I think that getting that 10 percent right in the broadband context from the start may make the 90 percent a little bit easier, at least I think that's what we'd like to try. And I don't know if others on the panel have perspective on that as well.

MS. MANNER: Chris was actually next.

MR. ESSID: He said what I was going to say.

MS. MANNER: Okay, so, Chris, I'm going to

cede your --

MR. FURTH: And we didn't even rehearse it ahead of time.

MS. MANNER: Please, sir?

MR. ARMENDARIZ: One of the things we're finding is that the commercial world is moving much much faster than public safety. A couple months ago I was showing my wife how to use, you know, the Facebook and social networks and she said, oh great, you mean to tell me if I have 911 I can send a text message to 911? I said, no you can't do that. Why not? I can send it to my daughter in California and I can send it so and so and so and so, you mean to tell me Stafford County I can't send to 911? No, you can't.

The technology is there, okay, but the problem is there's no guarantee that that text message is going to go through, so in working with Dorothy and VITA a couple of months ago we were trying to get this done, but the cellular providers don't want to play a part in that because of the liability issue, okay? So these are some of the issues that we need to tackle. Now, video also --

MS. MANNER: I'm sorry, I'm going to interrupt you because I know some of the panelists want to talk and we need to --

MR. ARMENDARIZ: Sure, okay. The comment I'm making is, you do have technology, video, text messages, that's moving much much faster, and those things need to be addressed, okay, thank you.

MS. MANNER: I want to turn the floor over to Behzad for a second.

MR. GHAFFARI: I have a very short comment actually adding to what David Said. I think broadband world is different than the narrow band. I mean this is a whole different thing, the technology's different. And in fact I think that if ERIC does its job right from day one, this 10 percent, I mean in fact you're going to reduce that 90 percent. I don't know, maybe we can say that 30 percent and 70 percent or something like that. We are hoping that we will experience something different.

MS. MANNER: Okay, thank you. I was going to go to Chris.

MR. ESSID: Technology's going to continue to evolve, and this reminds me of something I saw, I think it was on the Letterman show or something like that where they had somebody sending morse code and someone else was trying to send a text message, and while the technology's evolved, the morse code was faster. And so, no matter what we do, in my opinion

and the opinion of the first responders we've worked with over the years is, no matter what the technology, if you don't have the standard operating procedures and how things work, who does what in what situation and you're not trained on it, you won't be able to use it to 100 percent of its capability.

So I think that, you know, we're going to be having the same conversation years down the road, people want to know when we're going to just be done with interoperability. Interoperability is a core capability, and as these new technologies are developed we have to continue to work together with the public safety community and the user community to ensure that we consider all the ramifications of this new technology on operations.

So I hope that, you know, you can reduce it a little, but the new technology, if people have to know how it plugs in and fits into their operations, and I think that's what you were getting at. And we have programs that we're going to continue to do that, you have to look at that, and we're continuing through our Safecom program and other efforts to look at how do we offer resources and best practices lessons learned so everybody can utilize those.

MS. MANNER: And finally Ziad?

MR. SLEEM: Yes, thank you. And I think that the gentleman before me has really addressed it very nicely and eloquently. You know, first of all, these networks are really thoroughly complex but also simplistic enough to really enable end to end services. And from that perspective I think that, you know, many of these services would be much more enabled on a faster track than the narrow band services as my colleague Behzad has mentioned earlier.

The second element in terms of the operation of the network itself, also this kind of a concept of network of networks, there are some simplistic issues, nonetheless they are complex, but there are some built-in capabilities in these networks that will really fantastically enable these issues. And my last really my last point about this is more about the operational side of the house.

And I think my colleague from DHS has really sensed it very nicely, that we are learning as we are really going, and these kind of lessons learned and areas where these networks, you know, perform to whether public safety wants them to go and how they want them to perform and so forth need to be documented fairly well and need to be fairly well understood so that under different circumstances, you

know, ERIC can explain and can show how well these networks can really behave. Thank you.

MS. MANNER: Okay. So thank you very much, Gil. I'm going to call up our next speaker is John Doherty.

MR. DOHERTY: Good afternoon. I'm John Doherty, Vice President of Engineering for GEO Command Incorporated. I have a very brief comment today. GEO Command is a company that serves first responders communities with software that enhances emergency response planning, situational awareness, and interagency interoperability. A major component of our products is a gathering, maintenance, and sharing of critical data such as hazard and structure information.

As a consequence of our interest in the free exchange of data, GEO Command has become an early adopter of the Department of Homeland Security's Unified Incident Command and Decision Support Initiative. UICDS creates an open architecture framework to allow multiple organizations using their own diverse software tools to store and exchange data and manage resources.

DHS is currently developing compliance test procedures and will include UICDS compliance in future

grant requests. I'm here today not just representing GEO Command but some 20 other private sector and academic participants in the program. I'd like to urge on my behalf and theirs that ERIC adopt UICDS structure to promote interoperability and interoperability between various applications. Thank you.

MS. MANNER: Thank you. Do we have any comments?

(No response.)

MS. MANNER: Okay, well thank you very much for your comments. Next up is Prudence Parks.

MS. PARKS: Hi, good afternoon. My name is Prudence Parks and I'm with the Utilities Telecom Council. My question here is concerning a very limited issue. And while utilities have challenges themselves concerning interoperability when they have sister utilities coming to an emergency situation for restoration purposes, the question that I am going to limit myself to is the composition of the public safety advisory board.

Shouldn't the public safety advisory board include representatives from utilities and other critical infrastructure industries given that utilities and critical infrastructure industries